

REMARKS

Claims 2-5, 8, 15, 18, and 20-23 have been amended to recite that the method for forming the metallized composite includes depositing a discontinuous layer of metal, wherein the discontinuous layer includes discrete specular islands of metal, thereby providing a reflective appearance of a mirror. Support for this amendment can be found, for example, at page 6, line 23; page 6, lines 27 through page 7, line 3; and page 10, lines 15-16.

No new matter has been added.

Applicant's Invention

Applicant's claimed method is directed to forming a metallized composite, including the step of depositing a metal on a first thermoplastic layer to form a discontinuous layer of metal, the discontinuous layer being formed of discrete specular islands of metal. The discontinuous layer provides a reflective appearance of a mirror. A second thermoplastic layer is laminated onto the discontinuous layer to form the metallized composite.

Advantages of Applicant's Invention

Applicant's claimed method has several advantages. Discrete specular islands deposited according to the claimed method provide a mirror or mirror-like appearance. Further, reflective surfaces formed as discontinuous layers of discrete specular metal islands laminated between thermoplastic layers can be flexible while retaining the appearance of being reflective. Also, in forming the discontinuous metal layer of discrete specular metal islands, the need for etching to minimize the amount of metal between islands in order to improve adhesion between the first and second layers can be significantly reduced or eliminated. Reduction or elimination of etching, in turn, can significantly improve the appearance of finished parts, such as mirrors.

Rejection of Claims 15 and 16 under 35 U.S.C. § 102(b)

Claims 15 and 16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. patent 5,256,846 issued to Walters. In particular, the Examiner stated that Walters discloses a method of making a microwavable barrier film comprising depositing a barrier coating of metal

in a series of noncontiguous, discrete patterns and sandwiching the pattern on one polymeric film and affixing a second polymeric film to sandwich the metal coating. The Examiner further stated that, by bonding heat-sealable thermoplastic substrate layers together to sandwich a deposited metal coating provided in a series of noncontiguous, discrete patterns by heat sealing, the first and second thermoplastic layers are inherently partially melted to become a continuous thermoplastic sheet.

Walters teaches microwave barrier films formed by depositing a layer of metal on an insulative sheet and sandwiching a second insulative sheet on top of the metal layer. Walters teach that the metal may be deposited in a noncontiguous, discrete pattern. The specific patterns taught have a range of 3.0 mm to about 20 mm on a side. (Col. 4, lines 49-50) For example, as stated at Col. 4, lines 12-23 with reference to Fig. 2:

The present invention, depicted in FIG. 2, is not a susceptor. The film comprises a planar substrate zone 22 having opposed first and second surfaces 21, 23. A barrier coating zone 24 is deposited on surface 21 of substrate 22 for reflection of a portion of the microwave radiation to which the substrate is exposed, defining a barrier film 26. By varying the pattern and reflectivity of coating zone 24, the barrier film can be made resistant to arcing, substantially impermeable to gases and certain electromagnetic radiation wavelengths (particularly UV light) and selectively permeable to microwave energy.

As described above, Applicant's claimed method for forming a metallized composite, as amended, includes the step of depositing a metal on a first thermoplastic layer to form a discontinuous layer of said metal, the discontinuous layer including discrete specular islands of metal. Discrete specular islands of metal enable the composite to be flexible, while having a mirror-like surface that has the appearance of being reflective.

There is no disclosure or suggestion that the reflective elements formed by Walters are discrete specular islands, nor is there any disclosure or suggestion that the reflective elements formed by Walters would provide the reflective appearance of a mirror, as claimed by Applicant. Therefore, the teachings of Walters do not anticipate Applicants' method for forming a

metallized composite, as set forth in Claims 15 and 16. Claims 15 and 16 meet the requirements 35 U.S.C. § 102.

Rejection of Claim 21 under 35 U.S.C. § 103(a)

Claim 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Walters in view of U.S. patent 4,676,857 issued to Scharr, *et al.* In addition to the purported teachings previously stated, the Examiner cited Walters as teaching that any method for applying microwave reflective coatings can be used, provided the method does not substantially damage the substrate upon which the coating is being deposited. The Examiner stated that Walters does not specifically disclose applying the metal reflective coating by transfer from a substrate. The Examiner stated that Scharr, *et al.* teach that a metal layer for microwave heating material can be applied in a pre-selected pattern by using a transfer process such as hot stamping with very thin metal leaf. The Examiner concluded that it would have been obvious to one of ordinary skill in the art to have modified the method of Walters to include the metal deposition process of Scharr, *et al.*

Applicants' Claim 21 has been amended to include the element of depositing a discontinuous layer of discrete specular islands of metal, thereby providing a reflective appearance of a mirror. As with Walters, there is no disclosure or suggestion in Scharr, *et al.* of depositing a discontinuous layer of discrete specular metal islands to thereby provide a surface having a reflective appearance of a mirror. Therefore, neither Walters nor Scharr, *et al.*, taken separately or in combination, disclose or suggestion Applicant's method, as set forth in Claim 21, as amended.

Rejection of Claims 2-5, 22, and 23 under 35 U.S.C. § 103(a)

Claims 2-5, 22, and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent 6,093,278 issued to Wade. The Examiner stated that Wade discloses a method of making a vehicle trim part by depositing a metal on a sheet of polymeric material, applying adhesive, laminating a substrate material to the polymeric material to sandwich the metal pattern therebetween, forming the laminated sandwich into a shape by any suitable technique, and molding a backing material to the part. The Examiner stated Wade discloses that metallization in

a desired pattern can be performed by any of a wide variety of methods including sputtering, vapor deposition, ion beam deposition, or hot stamping of a metallized transfer sheet. The Examiner further stated that Wade discloses the metal pattern can be a wide variety of shapes including logos, lettering, or other desirable graphic appearances. The Examiner further states that it would have been obvious to one of ordinary skill in the art to have deposited the metal on the sheet of polymeric material in a "discontinuous layer including discrete islands of metal."

Applicants have amended Claims 2-5, 22, and 23 to recite that the discontinuous layer that is deposited is of discrete specular islands of metal, wherein the discontinuous layer provides a reflective appearance of a mirror.

The metal layer illustrated in Figures 1-3 and 5-9 of Wade is a continuous piece of metal, as opposed to a discontinuous layer of islands (i.e., more than one) as claimed by Applicant. Therefore, with Walter and Scharr, *et al.*, Wade does not teach or suggest depositing a discontinuous layer made of discrete specular islands of metal to thereby provide a reflective appearance of a mirror. As with Walters and Scharr, *et al.*, there is no disclosure or suggestion in Wade of Applicant's claimed method of forming a metallized composite as set forth in Applicant's Claims 2-5, 22 and 23, as amended.

Rejection of Claim 8 under 35 U.S.C. § 103(a)

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wade in view of U.S. patent 4,101,698 issued to Dunning, *et al.* and U.S. patent 3,996,461 issued to Sulzbach, *et al.* In addition to the purported teachings previously stated, the Examiner stated that Wade discloses that the metal layer can be aluminum or another metal depending on the desired appearance of the resulting mirror finish decorative portion. The Examiner stated that Wade does not disclose depositing indium metal by electron beam evaporation. The Examiner stated that Dunning, *et al.* teach that highly reflective metals used for trim parts of automobiles include indium, and that Sulzbach, *et al.* teach deposition techniques such as thermal evaporation, electron beam bombardment, sputtering, chemical vapor deposition, and induction heating. The Examiner stated that it would have been obvious to one of ordinary skill in the art to modify the teachings of Wade so as to deposit the metal in a discontinuous layer. The Examiner maintains

that it would have been obvious to one of ordinary skill in the art to combine the teachings of Wade, Sulzbach, *et al.*, and Dunning, *et al.* to deposit indium by electron beam evaporation.

Neither Dunning, *et al.*, nor Sulzbach, *et al.* remedy the definiteness of Wade as applied to Applicant's claimed method of forming a metallized composite. Specifically, there is no disclosure or suggestion in Walters, Dunning, *et al.* or Sulzbach, *et al.*, taken separately or in combination, of depositing a discontinuous layer of discrete specular metal islands that provide a reflective appearance of a mirror as part of a method to form a metallized composite, as claimed by Applicant in amended Claim 8. Therefore, Applicant's amended Claim 8 meets the requirements of 35 U.S.C. § 103 in view of these references, taken either separately or in combination.

Rejection of Claims 18 and 20 under 35 U.S.C. § 103(a)

Claims 18 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wade in view of U.S. patent 3,775,157, issued to Fromson. In addition to purported teachings previously stated, the Examiner stated that Wade discloses that the adhesive can be cured by application of pressure, heat and pressure, or through other means of curing adhesive. The Examiner cited Fromson as teaching adhesives used to make a metal-coated structure, such as automotive trim with excellent adhesion, include adhesives curable by actinic radiation. The Examiner stated that it would have been obvious to one of ordinary skill in the art to modify the method of Wade to include the light-cured adhesive taught in Fromson.

As with Wade, there is no disclosure in Fromson of Applicants' claimed method of depositing a discontinuous metal layer of discrete specular metal islands that provide a reflective appearance of a mirror. Therefore, neither Wade nor Fromson, taken either separately or in combination, disclose or suggest Applicant's method as set forth in amended Claims 18 and 20. Applicants' amended Claims 18 and 20 meet the requirements of 35 U.S.C. § 103(a) in view of Wade and Fromson, taken either separately or together.

Rejection of Claim 22 under 35 U.S.C. § 103(a)

Claim 22 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wade in view of U.S. patent 4,397,896, issued to Moran. The Examiner cited Wade for the same purported

teachings as previously stated, and also stated that Moran teaches decorative trim for vehicles are covered and/or embossed so as to give a particular decorative appearance and surface contour. The Examiner further stated that it would have been obvious to one of ordinary skill in the art to have modified the method of Wade for making a vehicle trim part by embossing the trim part, as taught by Moran, to give the trim a particular surface contour.

As with Wade, there is no disclosure or suggestion in Moran of Applicant's claimed method of forming a metallized composite, including the step of depositing a metal on a first thermoplastic layer to form a discontinuous layer of the metal, wherein the discontinuous layer includes discrete specular islands of metal, thereby providing a reflective appearance of a mirror. Therefore, neither Wade nor Moran, taken either separately or in combination, disclose or suggest Applicant's method for forming a metallized composite, as set forth in amended Claim 22. Applicant's amended Claim 22 meets the requirements of 35 U.S.C. § 103(a), in view of Wade and Moran, taken either separately or in combination.

Allowance of Claim 26

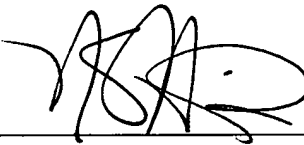
Applicants hereby acknowledge the Examiner's statement that Claim 26 is allowed.

SUMMARY AND CONCLUSIONS

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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